

NOVEMBER/DECEMBER 2024

GOCH44A/DOCH44A — POLYMER AND
PLASTICS

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Polymers.
2. What are the synthetic polymers?
3. Define branched polymers.
4. Define glass transition temperature.
5. What are homo and co polymers?
6. Define Block copolymer.
7. List out the use of polystyrene.
8. What is expansion of Buna-S?
9. Define Plastics.
10. Explain the term plasticizers.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Discuss addition and condensation polymers.
Or
(b) Narrate on Coordination polymerization.
12. (a) Illustrate the difference between linear and cross-linked polymer.
Or
(b) What are tactic, isotactic and atactic polymers?
13. (a) Write a note on graft polymers.
Or
(b) Describe the Osmometry method of determining molecular weight of macromolecules.
14. (a) Write the preparation and structure of polytetrafluoroethylene (PTFE).
Or
(b) Write the preparation, properties and uses of polyurathane rubber.
15. (a) Write the difference between Thermo plastics and Thermo setting resins.
Or
(b) Comment on Fillers and Pigments. Mention their uses in polymer industry.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. (a) Discuss the ring opening mechanism for polymerization of polymers.
(b) Differentiate between natural and synthetic polymers.
17. Explain the effect of crystallinity on the properties of polymers.
18. Explain number average and weight average molecular weights of polymers.
19. Write the preparation and uses of polystyrene and polypropylene.
20. What significant part do
(a) Lubricants and
(b) Catalysts
(c) Dyes play in polymer degradation.